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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,593	03/23/2004	Gernot Brasen	DE920030002US1	2463

7590 03/23/2006

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EXAMINER
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ANDERSON, DENISE BROWN

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/806,593		BRASEN ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Denise B. Anderson		2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,10-19 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 2,7-9,20 and 25-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

There was no information disclosure statement (IDS) submitted by applicant for consideration by the examiner.

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Drawings***

The drawings are objected to because figures 3 and 4 appear to have shading that has prohibited them from being reproduced clearly. Copies of the drawings (figures 3 and 4) are included in this Office Action. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary

to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The title of the invention does not comply 37 CFR 1.72(a). The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words, and may not contain more than 500 characters. The title is objected to because it is not descriptive. The following title is suggested: "Interferometric Topography Method for Calculating the Material-Dependent Phase Shift". A new title is required that is clearly indicative of the invention to which the claims are directed. See MPEP § 606.

### ***Claim Objections***

Claims 6, 15 and 24 are objected to because of the following informalities: there is no antecedent basis for the phrase "said first surface". The objection can be overcome by adding a statement such as the following to claim 1: "...said method comprising, providing a first surface having a first region and a second region..." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are not specific to the details of how the computer program product completes the tasks indicated. For example, in claim 10, how does the computer readable medium or do the instructions cause the generation of a light beam or the reflection of the light beam.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 3-6, 10, 12-15, 19, and 21-24 are rejected.**

**Claim 1, 3-6, 10, 12-15, 19 and 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al (USPN 6,580,515).**

As to claims 1, 10 and 19, Li et al discloses, a laser for generating first and second coherent beams, reference and measurement beams described in column 1, lines 18-20, reflecting the reference and measurement beams from two regions 107, 109 on a surface 100 (figure 1), measuring the reflectivity of the reference region Ro

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(column 6, lines 11-13), determining a topography-dependent phase shift based on the reflectivity of the reference region (column 6, lines 17-24 and lines 43-44), and measuring the height  $h$  (figure 1) based on the phase shift (equation 2 in column 1).

As to claims 3, 12 and 21, Li et al discloses a phase shift dependence of on the optical property of the reference region (column 3, lines 23-28 and figures 11a and 13a)

As to claims 4, 13 and 22, Li et al discloses a phase shift with reference to a curve relating the first reflectivity to a material-dependent phase shift (see combination of figures 5a, 5b and 10a, 10b and 11a, 11b).

As to claims 5, 14 and 23, Li et al discloses a second reflectivity from a surface with known optical properties (column 12, lines 64-67 and column 13, lines 1-8).

As to claims 6, 15, and 24, Li et al discloses a phase shift based on a first and a second reflectivity (column 7, lines 24-32 and equations 10a, 10b, column 3, lines 1-7).

### ***Allowable Subject Matter***

Claims 2, 7- 9, 11, 16-18, 20, and 25- 27 are allowable.

Claims 2, 7- 9, 11, 16-18, 20, and 25- 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 2, 11 and 20 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious comparing the first and second

reflectivities to make a determination for using the total phase shift in combination with the rest of the limitations of claim.

Claims 7, 16 and 25 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious using the fringe visibility in the calculation of the topography-dependent phase shift in combination with the rest of the limitations of claim.

Claims 8, 17 and 26 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious determination of the topography-dependent phase shift based on the specific mathematical relationship shown in combination with the rest of the limitations of claim.

Claims 9, 18 and 27 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious subtracting the material-dependent phase shift from the topography-dependent phase shift in combination with the rest of the limitations of claim.

Claims 11 and 16-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Makosch et al (USPN 4,298,283) discloses an apparatus similar to the claimed apparatus, except the separate reflectivities of two different regions are not measured.

Makosch et al (USPN 5,392,116) discloses an apparatus similar to the claimed apparatus, except the separate reflectivities of two different regions are not measured

Kulkarni et al (USPN 4,844,616) discloses an apparatus similar to the claimed apparatus, except the separate reflectivities of two different regions are not measured.

Kitagawa (USPN 4,844,616) discloses an apparatus similar to the claimed apparatus, transmissivity is being measured instead of reflectivity.

Sugiyama (USPN 5,914,782) discloses an apparatus similar to the claimed invention, except a coherent source is not used and the Jones matrix is used.

Rovira (USPN 6,856,384) discloses an apparatus similar to the claimed apparatus, except the separate reflectivities of two different regions are not measured.

***Fax/Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise B. Anderson whose telephone number is 571-272-8324. The examiner can normally be reached on Mon-Fri (9:30 AM - 6 PM).

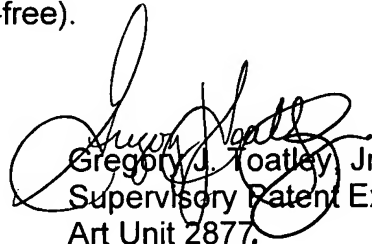
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Denise B. Anderson, Ph.D.  
Patent Examiner  
Art Unit 2877

  
Gregory J. Toatley Jr.  
Supervisory Patent Examiner  
Art Unit 2877  
*20 Mar 06*

DBA

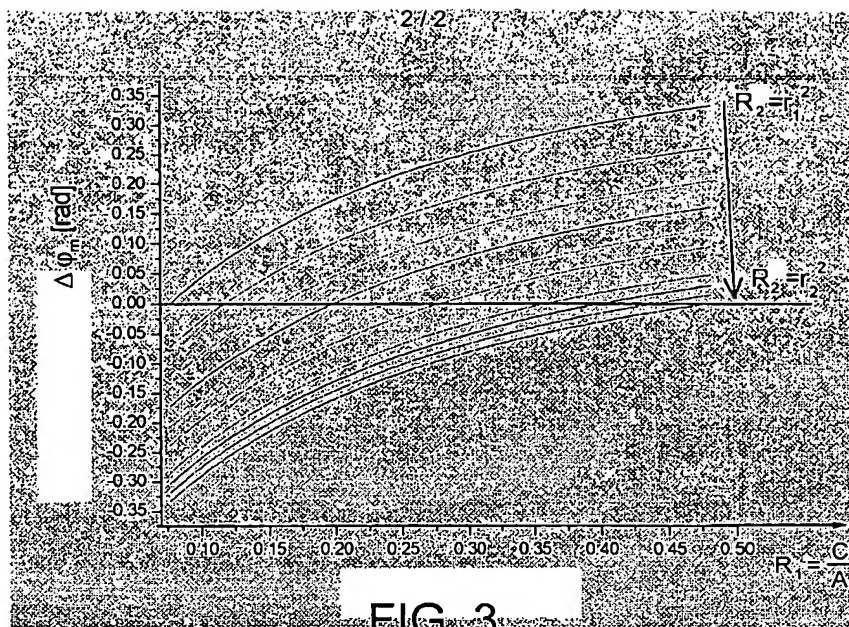


FIG. 3

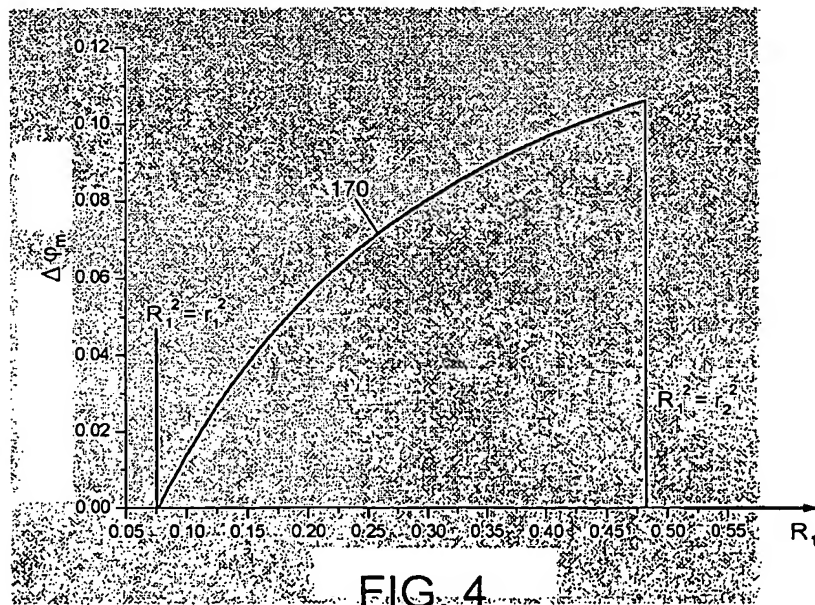


FIG. 4